PRODUCTION OF ATTENUATED CHIMERIC RESPIRATORY SYNCYTIAL VIRUS VACCINES FROM CLONED NUCLEOTIDE SEQUENCES

Abstract Of The Disclosure

Chimeric respiratory syncytial virus (RSV) and vaccine compositions thereof are produced by introducing one or more heterologous gene(s) or gene segment(s) from one RSV subgroup or strain into a recipient RSV backround of a different subgroup or strain. The resulting chimeric RSV virus or subviral particle is infectious and attenuated, preferably by introduction of selected mutations specifying attenuated phenotypes into a chimeric genome or antigenome to yield, for example, temperature sensitive (ts) and/or cold adapted (ca) vaccine strains. Alternatively, chimeric RSV and vaccine compositions thereof incorporate other mutations specifying desired structural and/or phenotypic characteristics in an infectious chimeric RSV. Such chimeric RSV incorporate desired mutations specified by insertion, deletion, substitution or rearrangement of one or more selected nucleotide sequence(s), gene(s), or gene segment(s) in a chimeric RSV clone. This provides a method for development of novel vaccines against diverse RSV strains by using a common attenuated backbone as a vector to express protective antigens of heterologous strains. The immune system of an individual is stimulated to induce protection against natural RSV infection, preferably in a multivalent manner to achieve protection against multiple RSV strains and/or subgroups.